(19) JAPANESE PATENT OFFICE

PATENT ABSTRACTS OF JAPAN

(11) Publication number: **11140580 A**
(43) Date of publication of application: **25.05.1999**

(51) Int. Cl **C22C 38/00**
B22D 11/00, C22C 38/58

(21) Application number: **09301783**
(22) Date of filing: **04.11.1997**

(71) Applicant: **NIPPON STEEL CORP**
(72) Inventor: **ASAHI HITOSHI**
TAMEHIRO HIROSHI
HARA TAKUYA
UEMORI RIYUUJI

(54) CONTINUOUSLY CAST SLAB FOR HIGH STRENGTH STEEL EXCELLENT IN TOUGHNESS AT LOW TEMPERATURE, ITS PRODUCTION, AND HIGH STRENGTH STEEL EXCELLENT IN TOUGHNESS AT LOW TEMPERATURE

(57) Abstract:

PROBLEM TO BE SOLVED: To inhibit the coarsening of austenite on reheating of a cast slab and to obtain a high strength hot rolled steel plate having fine-grained structure and excellent toughness at low temperature by specifying the area ratio of transgranular transformed ferrite in martensitic and bainitic structures of a cast slab.

SOLUTION: A steel composition, consisting of, by mass ratio, 0.03-0.10% C, <0.6% Si, 1.2 2.5% Mn, <0.005% P, <0.003% S, 0.1-1.0% Ni, 0.15-0.60% Mo, 0.005-0.10% Nb, 0.001-0.006% N, 0.005-0.006% Ti, and the balance essentially Fe and containing, if necessary, one or ≥2 kinds among <0.10% Cr, <1.0% Cu, <0.10% V, 0.0005-0.0020% B, <0.006% Ca, <0.02% REM, <0.006% Mg, and <0.10% Zn, is provided. Simultaneously, a cast slab, in which the area ratio of transgranular transformed ferrite in martensitic and bainitic structures is regulated to ≥10%, is provided. Further, this cast slab is formed into steel plate by controlled rolling.